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## What happens when the test is performed?

- The test is done by a specialist using equipment and cameras in the radiology department. You will lie on your back during the procedure and be hooked up to a heart monitor during the time the doctor is doing this test.

A catheter (a sterile tube that resembles a strand of spaghetti, only it is hollow) needs to be inserted through the skin into one of the large veins in either your groin or your neck or arm. Most often, the catheter is inserted in the groin. Before the catheter is placed, medicine through a small needle is used to numb the skin and the tissue underneath the skin in that area. The numbing medicine usually stings for a second. A needle on a syringe is then inserted and some blood is drawn into the syringe so that the doctor knows exactly where the blood vessel is located.

One end of a wire is threaded into the blood vessel through the needle and the needle is pulled out, leaving the wire temporarily in place. This wire is several feet long, but only a small part of it is inside your vein. The catheter can then be slipped over the outside end of the wire and moved forward along it like a long bead on a string until it is in place with one end inside the vein. The wire is pulled out of the catheter, leaving the catheter in place. Now the catheter easily can be moved forwards and backwards inside your vein by the doctor who holds the outside end. Special controls allow the doctor to point the tip of the catheter in different directions.

The doctor will carefully move the catheter along the large vein and through the chambers of your heart, into the arteries in your lungs called "pulmonary arteries." The catheter shows up on x-rays and the doctor will watch it live on a video monitor to know exactly where the catheter is. While the catheter is pointed into each of the pulmonary arteries the doctor will inject a special dye through the catheter; this dye that shows up well on x-rays. X-ray pictures will be taken as the dye travels along the arteries and outlines all of the blood vessels in the lungs through which it can flow.

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The x-ray pictures look very much like a tree with branches getting smaller and smaller as they leave the trunk. A blood clot in the lungs will make the picture look as if one branch was sawed off of this tree, so that there are no small branches continuing off of it.

The test usually requires somewhat longer than one hour to perform start to finish. Other than the brief sting of the numbing medicine and some soreness in your groin area afterwards, you are not likely to feel any pain. For some people, the procedure provokes anxiety. Some patients also have a difficult time lying still for the time it takes to perform this test.

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